Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Previously presented) A method for identifying a compound that inhibits sister chromatid separation comprising inhibiting the proteolytic activity of separase, wherein an active separase in the form of a full-length separase upon activation in the presence of securin is incubated in the presence of a separase substrate with a test compound, and wherein the inhibiting effect of the test compound on the proteolytic activity of the active separase is determined; wherein said separase substrate is a peptide comprising an amino acid sequence EXXR, wherein X is any amino acid, and the separase substrate is capable of being cleaved by the active separase.

2. (Original) The method of claim 1, wherein the active separase is human.

3. (Previously presented) The method of claim 1, wherein the active separase has been obtained by activation of the full-length separase in a mitotic cell extract in the presence of securin.

4. (Original) The method of claim 3, wherein the mitotic cell extract has been obtained from Xenopus laevis eggs.

5. (Previously presented) The method of claim 1, wherein the separase substrate is a peptide comprising a fluorogenic group, wherein processing of the peptide results in a change in fluorescence, and wherein the change in fluorescence is correlated with the separase activity.

6. (Previously presented) The method of claim 5, wherein the separase substrate is a peptide comprising an amino acid sequence DREIMR (SEQ ID NO:9), SFEILR (SEQ ID NO:11) or EWELLR (SEQ ID NO:12).

7 - 10. (Cancelled)

11. (Currently amended) A method for identifying a compound that inhibits sister chromatid separation comprising inhibiting the proteolytic activity of separase, wherein an active separase in the form of one or more separase fragments, optionally upon activation ~~of a full-length separase~~ in the presence of securin, is incubated in the presence of a separase substrate with a test compound, and wherein the inhibiting effect of the test compound on the proteolytic activity of the active separase is determined; wherein said separase substrate is a peptide comprising an amino acid sequence EXXR, wherein X is any amino acid, and the separase substrate is capable of being cleaved by the active separase.

12. (Previously presented) The method of claim 11, wherein the active separase is human.

13. (Previously presented) The method of claim 11, wherein the active separase has been obtained by activation of one or more separase fragments in a mitotic cell extract in the presence of securin.

14. (Previously presented) The method of claim 13, wherein the mitotic cell extract has been obtained from Xenopus laevis eggs.

15. (Previously presented) The method of claim 11, wherein the separase substrate is a peptide comprising a fluorogenic group, wherein processing of the peptide results in a change in fluorescence, and wherein the change in fluorescence is correlated with the separase activity.

16. (Previously presented) The method of claim 15, wherein the separase substrate is a peptide comprising an amino acid sequence DREIMR (SEQ ID NO:9), SFEILR (SEQ ID NO:11) or EWELLR (SEQ ID NO:12).